

1. A method of producing an electromechanical device, comprising
poling an electroactive ceramic;
laser machining the electroactive ceramic to form a desired shape; and
incorporating the electroactive ceramic into an electromechanical sensor
or actuator.
2. The method of claim 1, wherein laser machining includes machining grooves into
a surface of the electroactive ceramic.
3. The method of claim 2, further comprising depositing an electrode material into
the grooves in the surface of the electroactive ceramic.
4. The method of claim 1, further comprising depositing an electrode material onto a
surface of the electroactive ceramic produced by laser machining.
5. The method of claim 1, wherein the produced sensor or actuator is a strain-
relieved, planar transducer.
6. The method of claim 1, wherein the electroactive ceramic is selected from the
group consisting of piezoelectric ceramics and electrostrictive ceramics.
7. The method of claim 1, wherein poling the electroactive ceramic precedes laser
machining.
8. The method of claim 1, wherein poling the electroactive ceramic follows laser
machining.
9. The method of claim 1, wherein the electroactive ceramic comprises grooves
which render its electromechanical properties anisotropic.

10. The method of claim 1, wherein at least 1% of the electroactive ceramic is removed during laser machining.
11. The method of claim 10, wherein at least 5% of the electroactive ceramic is removed during laser machining.
12. The method of claim 10, wherein at least 20% of the electroactive ceramic is removed during laser machining.
13. The method of claim 10, wherein at least 50% of the electroactive ceramic is removed during laser machining.
14. The method of claim 10, wherein at least 75% of the electroactive ceramic is removed during laser machining.
15. The method of claim 10, wherein at least 90% of the electroactive ceramic is removed during laser machining.
16. The method of claim 1, wherein the electroactive ceramic possesses a surface area at least 10% greater after machining than its surface area before machining.
17. An electromechanical device, comprising
a substantially planar electroactive ceramic member having grooves defined on a planar surface of the member, whereby the grooves allow the member to conform to a curved surface.
18. The electromechanical device of claim 17, wherein the device is an electromechanical sensor or actuator.

- 1 19. The electromechanical device of claim 17, wherein the device can conform to a
2 curved surface having a radius of curvature no greater than 0.25".
3
- 4 20. The electromechanical device of claim 17, wherein the grooves are substantially
5 parallel and the member can conform to a cylindrical surface.
6
- 7 21. The electromechanical device of claim 17, wherein the grooves are substantially
8 concentric and the member can conform to a spherical surface.
9
- 10 22. An electromechanical device, comprising
11 a substantially planar bimorph electroactive ceramic member having slots defined
12 in the member, whereby the slots multiply an electromechanical bending
13 response of the bimorph member.
14
- 15 23. The electromechanical device of claim 22, wherein the device is an
16 electromechanical sensor or actuator.
17
- 18 24. The electromechanical device of claim 22, wherein the slots are substantially
19 concentric.
20
- 21 25. The electromechanical device of claim 22, wherein the slots are substantially
22 parallel.